

Yellowstone Cutthroat Trout Restoration in the Upper Boulder River Watershed

Decision Notice & FONSI

**Gallatin National Forest
Yellowstone Ranger District
Sweetgrass County, Montana**

June 2012

Lead Agency:

USDA Forest Service

Cooperating Agency

Montana Fish, Wildlife & Parks

Responsible Official:

**Mary Erickson
Gallatin Forest Supervisor**

For Further Information, Contact:

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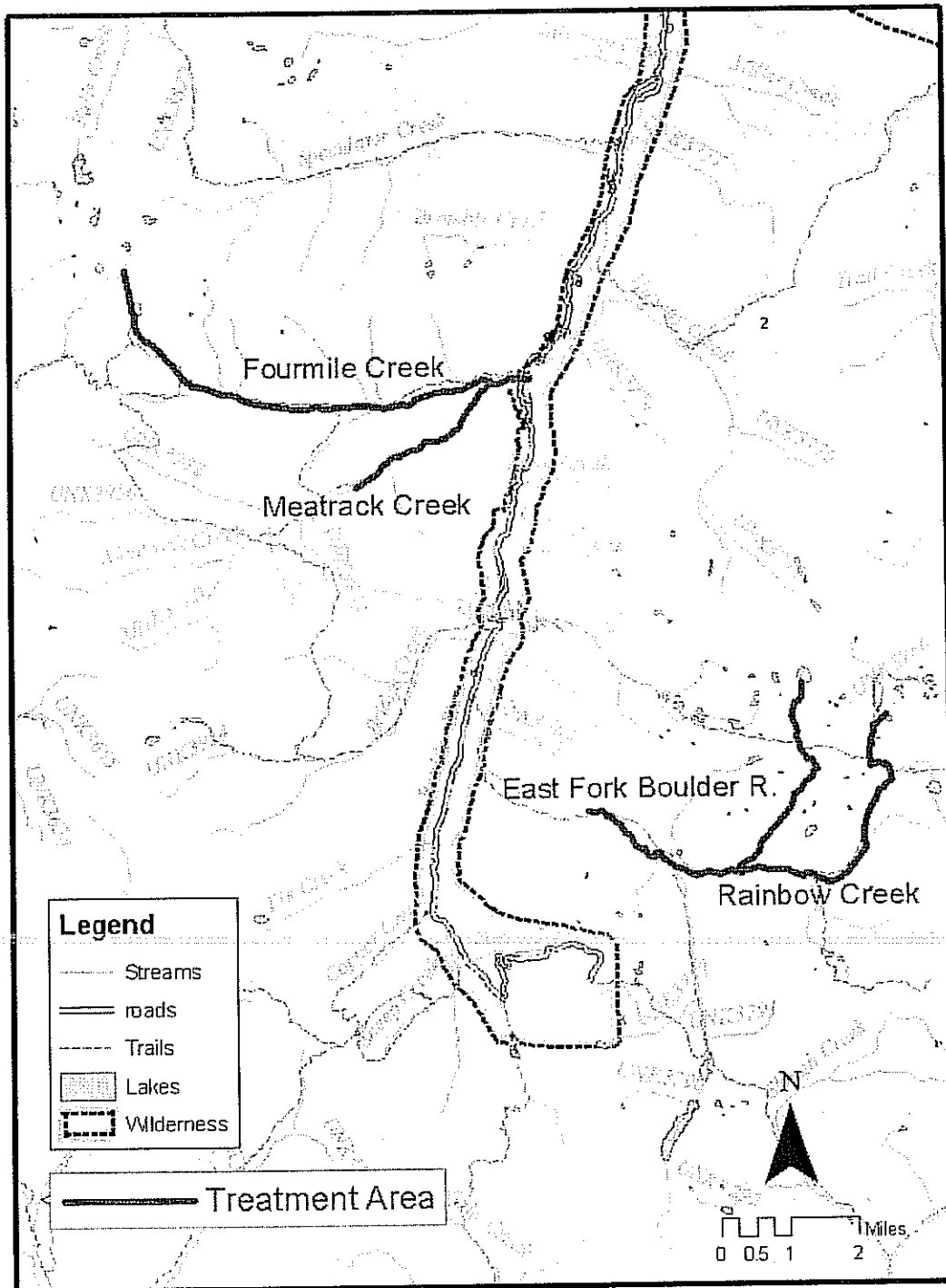
**DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT**

**Yellowstone Cutthroat Trout Restoration in the Upper
Boulder River Watershed**

**GALLATIN NATIONAL FOREST
YELLOWSTONE RANGER DISTRICT
SWEETGRASS COUNTY, MONTANA**

I. INTRODUCTION

This Decision Notice documents my decision and the “finding of no significant impact” (FONSI) to authorize the application of the fish toxicant rotenone in Fourmile Creek and East Fork Boulder River and their tributaries, and within the Absaroka-Beartooth Wilderness Area. The location of this project is in the upper Boulder River watershed within 6 townships: T7S R12E, T7S R13E, T6S R13E, T6S R12E, T6S R11E, and T5S R11E. The upper Boulder River watershed is located approximately 50 miles south of Big Timber, Montana within lands primarily owned and administered by GNF. Above Natural Bridge Falls, the Boulder River was historically fishless with the existing fishery being a reflection of fish species that were stocked in the river, its tributaries, and headwater lakes. A majority of the project is within the Absaroka-Beartooth Wilderness (Map 1). The treatment in the Fourmile Creek drainage would extend about 7 miles from the outlets of Silver and Prospect Lakes downstream to a steep boulder reach located just upstream from the confluence of Fourmile Creek with the Boulder River. In addition, the lower 2.6 miles of Meatrack Creek would be treated above the Fourmile Creek confluence. The East Fork Boulder River treatment would begin at the outlet of the lowermost of the Rainbow Lakes and Mirror Lake, and extend downstream about 1.75 miles past the mouth of Rainbow Creek into the East Fork Boulder River. Of the total distance proposed for treatment (18.5 stream miles) all but the lower ¼ mile of Fourmile Creek lies within the Absaroka-Beartooth Wilderness. I have come to this decision after thorough review of public comments and the effects analysis prepared by Montana Fish, Wildlife and Parks (MFWP) in the Yellowstone Cutthroat Trout Restoration in the Upper Boulder River Watershed Environmental Assessment and associated Decision Notice, which was signed by the MFWP Regional Supervisor (March 16, 2012). Forest Service decision authority with respect to this project is specifically limited to the authorization of piscicide application within the wilderness.



Map 1. Location of treatment stream reaches within the upper Boulder watershed south of Big Timber Montana relative to the Absaroka-Beartooth Wilderness.

II. BACKGROUND

The jurisdiction and responsibility for the protection and management of fish and wildlife populations on National Forest System lands within the state of Montana, including wilderness areas, reside with MFWP. Section 4(d)(7) of the Wilderness Act provides that "Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the National Forests." Under this authority, the Region 5 MFWP supervisor has made the decision to eliminate non-native rainbow trout and Yellowstone cutthroat trout (YCT) hybrids currently occupying: a) Fourmile Creek, the East Fork Boulder River, and their tributaries using the piscicide rotenone and b) remove rainbow trout from the six Rainbow Lakes that contain fish and Mirror Lake using gill netting and genetic swamping through repeated high density stocking of genetically pure YCT in order to protect the YCT population in the upper Boulder River watershed. This action would replace non-native rainbow trout and YCT hybrids in the upper Boulder River watershed with native YCT. All but the lower ¼ mile of Fourmile Creek lies within the Absaroka-Beartooth Wilderness.

The Environmental Assessment and Decision Notice indicate that by replacing the remaining sources of rainbow trout genetics in the upper Boulder watershed with genetically pure YCT, the entire upper Boulder River system will trend toward being composed by a large interconnected YCT population (metapopulation). MFWP and the Forest Service have agreed to implement the Memorandum of Understanding and Conservation Agreement for westslope cutthroat trout and Yellowstone cutthroat trout in Montana (MOU; 2007). This decision specifically addresses Objectives 1 and 3 of the MOU:

Objective 1: "Maintain, secure, and/or enhance all cutthroat trout populations designated as conservation populations, especially the genetically pure components.

Objective 3: "Seek collaborative opportunities to restore and/or expand each cutthroat trout subspecies into selected suitable habitats within their respective historical ranges".

The Forest Service has jurisdiction and responsibility for the occupancy, use, and management of National Forest System lands, including lands within the Absaroka-Beartooth Wilderness. For this project, the Forest Service has authority to decide whether to allow the application of registered and approved fish toxicants within the Absaroka-Beartooth Wilderness as outlined in the Environmental Assessment and Decision Notice (located in the Project File).

The Association of Fish and Wildlife Agencies (AFWA) agreement with the Forest Service and Bureau of Land Management (2006) provides the following specific guidance for conducting chemical fish removal projects in wilderness:

"Chemical treatment may be necessary to prepare waters for the reestablishment of indigenous fish species, consistent with approved wilderness management plans, to conserve or recover federally listed threatened or endangered species, or to correct

undesirable conditions resulting from human activity. Proposals for chemical treatments will be considered and may be authorized by the Federal administering agency through application of the MRDP” (outlined in Section E). General Policy states “Any use of chemical treatments in wilderness requires prior approval by the Federal administering agency.”

AWFA Guidelines for Chemical Treatment

- a) Use only registered pesticides according to label directions.
- b) In selecting pesticides, give preference to those that will have the least impact on non-target species and on the wilderness environment.
- c) Schedule chemical treatments during periods of low human use, insofar as possible.
- d) Immediately dispose of fish removed in a manner agreed to by the Federal administering agency and the State agency.

These guidelines are further defined in the Forest Service Manual:

Forest Service Manual Direction (FSM 2323.43f)

Chemical treatment may be used to prepare waters for reestablishment of indigenous, threatened or endangered, or native species, or to correct undesirable conditions caused by human influence.

These agreements and guidance clearly define the criteria for which fish toxicants are an appropriate tool for wilderness fishery management. My decision meets these criteria (See Section IV).

III. PURPOSE AND NEED FOR ACTION

The purpose and need for this project is to replace the existing fisheries in the upper Boulder watershed with Yellowstone cutthroat trout (YCT) in an effort to secure a YCT metapopulation by eliminating sources of rainbow trout hybridization. The recent MFWP decision (March 16, 2012) identified that the most practical and expedient way to implement this project with minimal impact to wilderness character requires utilizing the piscicide rotenone to remove rainbow trout and YCT hybrids from the East Fork Boulder River, Fourmile Creek, and tributaries thereof. Because nearly all stream reaches proposed for chemical treatment lie within the Absaroka-Beartooth Wilderness boundary, authorization for application of piscicides must be granted by the Forest Service.

IV. DESCRIPTION OF THE DECISION & CONSISTENCY WITH LAWS, REGULATIONS, & POLICY

As the deciding officer, it is my determination and decision that authorization of the use of the registered and approved fish toxicants is consistent with the Wilderness Act of 1964 and the subsequent Absaroka-Beartooth Wilderness Act of 1978. This decision is also consistent with agreements that have been signed between the Forest Service and the AFWA and MFWP as previously noted.

The toxicant selected by the State, rotenone, has been registered and approved by the Environmental Protection Agency (EPA) for use in fishery management and for application within the environment. Rotenone has been shown by numerous studies to present a minor risk to the environment due to the low concentrations of the piscicide needed to effectively remove target organisms. Rotenone has a short life expectancy, breaking down into non-toxic components. Finally, rotenone can be readily detoxified by potassium permanganate, which also breaks down rapidly into non-toxic components.

The treatment plan selected by MFWP from the May 2011 Environmental Assessment (Project File) represents a reasonable and prudent approach with ample safeguards against undesirable environmental influences. A pesticide use proposal form (FS-2100-2) has been completed by MFWP for this project, and reviewed by the Forest Service Region 1 pesticide coordinator (Appendix A). The minimum requirements decision guide process was also followed (Appendix B), demonstrating that selection of rotenone for treatment in the wilderness reflects sensitivity to wilderness management concerns. This is because rotenone usage would reduce the time and personnel required to successfully complete removal of rainbow trout and YCT hybrids from streams in the upper Boulder River watershed.

Because treatment objectives and rotenone usage are consistent with current direction and agreements, I find sufficient reason to approve application of piscicides in Fourmile Creek, East Fork Boulder River, and tributaries thereof within the Absaroka-Beartooth Wilderness Area, Gallatin National Forest.

Terms and Conditions

This authorization is contingent upon the implementation of the guidelines listed above and in the attached minimum tool analysis outlined in Appendix B. Use of the fish toxicant is restricted to the specific provisions authorized on the pesticide use proposal form (FSM 2150) Appendix A. This authorization will be in effect for a period of four consecutive years, beginning in the summer of 2012.

V. PUBLIC INVOLVEMENT

Two 30 day public comment periods were provided for this proposal. The first began April 6, 2011, when a scoping letter was sent out by FWP to 240 potentially interested and affected individuals, agencies and organizations seeking initial comment on the proposed chemical removal of rainbow trout in the upper Boulder watershed. It was also publicized in the Billings Gazette and sent to the local newspapers. A total of 4 comments were returned from the persons who received the scoping document. These comments helped identify the issues to be specifically addressed in the analysis. This analysis was documented in the Environmental Assessment (Project File) prepared and sent out by FWP to over 140 groups or individuals and posted on the MFWP website May 20, 2011. A total of 7 people or groups commented on the Environmental Assessment (EA). Also, a public meeting was held by MFWP June 15, 2011 in Big Timber, Montana, which was attended by two members of the public who provided additional oral comments of support to MFWP. All of the comments received in response to the EA are presented in Appendix C.

Because my authority and decision are focused on authorizing piscicide use within the Abaroka-Beartooth Wilderness Area, the content of my decision focuses on that topic and comments received concerning it. Of the four comments received in the response to the scoping letter and seven comments received in response to the EA, there were no issues significant to this decision. Instead, concerns were focused on either the use of piscicide in general or the expenditure of funds for native fish restoration. This may be because, impacts to wilderness character were specifically analyzed in the EA, including relative to a range of alternatives: no action, use of mechanical removal, barrier augmentation, application of antimycin, and application of rotenone (the selected alternative). This analysis indicated that application of rotenone in streams and gill netting in lakes had the lowest impact to wilderness character while accomplishing fishery management objectives. Finally, the EA demonstrated that application of rotenone is consistent with the AFWA agreement, as previously described.

VI. FINDING OF NO SIGNIFICANT IMPACT (FONSI 40 CFR 1508.27)

I have reviewed the direct, indirect, and cumulative effects of the proposed activities and alternatives documented in the EA for the Yellowstone Cutthroat Trout Restoration in the Upper Boulder River Watershed and determined that these actions will not have significant impacts on the quality of the human environment. Thus, an environmental impact statement will not be prepared. The implementing regulations for NEPA at 40 CFR 1508.27 provide criteria for determining the significance of effects. This provision requires consideration of both the context and intensity of predicted effects in determining significance. I based my finding on the following:

- (a) Context:** I have determined that the appropriate context for weighing the significance of impacts was within the general vicinity of the project area including the Fourmile Creek / East Fork Boulder River drainages within the Absaroka-Beartooth Wilderness. I came to this conclusion because this project and its possible impacts temporally and spatially to wilderness character are limited to this locality.
- (b) Intensity:** In accordance with 40 CFR 1508.27(b) my determination that the severity of impacts were not significant was based on consideration of the following 10 factors:

1. Impacts that may be both beneficial and adverse.

This project involves application of the piscicide rotenone in Fourmile Creek, Meatrack Creek, East Fork Boulder River, and Rainbow Creek within the Absaroka-Beartooth Wilderness Area. Its impacts are temporary in nature, with respect to wilderness character, and based on the predicted impacts of the alternatives discussed in the EA (p. 46), I have determined that both the beneficial and adverse impacts of the action will not be significant. As discussed on page 8 of this Decision Notice, I identified no issues to be significant to this decision.

2. The degree to which the proposed action affects public health and safety.

There are no significant effects or risks to public health and safety resulting from this project. As stated in the EA (p. 45), bioassays indicate that, at proposed concentrations, rotenone will have no effect on mammals, including humans, that consume the treated water or dead fish. However, as stated in the EA, mitigative precautions such as signing and public notification during the treatment period will be conducted. Finally, there is a minor risk to project personnel coming into contact (particularly skin and eyes) with the chemical during treatment; this risk will be mitigated by using proper protective equipment.

3. Unique characteristics of the geographic area.

There are no effects to unique characteristics of the geographic area. As disclosed in the EA, there will be no modification of stream channels (pp. 41 -43) or other features on federal lands. The end result of the project will be the removal of sources of rainbow trout hybridization which over time is expected to result in the conversion of the upper Boulder River watershed to an interconnected YCT conservation population.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial

There are no environmental effects identified that are highly controversial among known experts in the field of fish and wildlife management. There is public disagreement regarding the need for this project, but there has been no disagreement between fish and wildlife management experts over its environmental effects.

5. The degree to which the effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.

There are no unique or unknown risks associated with this project. Experience with similar projects elsewhere, including locally, have indicated that potential risks of applying fish toxicants, including rotenone, are minimal and readily mitigable. For example, as noted in the EA (pp. 44-45), there is minor risk of a rotenone spill, which can be mitigated by safe handling procedures, or of fish being killed beyond the treatment area, which can be mitigated by careful control of chemical placement and quantity, by monitoring using sentinel fish and by applying potassium permanganate as needed.

Effective concentrations of rotenone and potassium permanganate are low (parts per million). Apart from the intended toxicity to fish, these chemicals as prescribed are relatively benign in the environment, and break down relatively rapidly in conditions present in streams of the upper Boulder watershed.

6. The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

This action does not establish precedent for future actions involving the use of fish toxicants in Wilderness Areas, as decisions relative to piscicide application in wilderness are made on a case-by-case basis. Fishery management, including the use of fish toxicants, is a standard practice, even within wilderness.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

The direct and indirect effects of this proposal will not compound the effects of other past, present, and reasonably foreseeable actions or result in a significant cumulative effect on any of the area's resources with the exception of strengthening the population viability the upper Boulder YCT population.

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Historic Register of Historic Places or may cause loss or destruction of significant, scientific, cultural, or historical resources.*

There will be no significant effects to private land, districts, sites or listed in or eligible for listing in the National Register of Historic Places, because there are no private lands within this area of the wilderness nor are districts, sites, or listed/eligible National Register of Historic Places that will be impacted by this project within the wilderness.

9. *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

The proposed action will not result in significant effects to any threatened or endangered species. A Wildlife Biologist reviewed the project and analyzed the potential impacts of the proposed activity on various species and their habitats in the BE/BA (Project File). The determination for these species was that the Yellowstone Cutthroat Trout Restoration in the Upper Boulder River Watershed project 'may effect, not likely to adversely affect' the grizzly bear (threatened) and would have 'no effect' on lynx (threatened) or lynx critical habitat. There are no plants listed as threatened or endangered in the project area.

10. *Whether the action threatens a violation of Federal, State, or Local law or requirements imposed for the protection of the environment.*

The action will not violate Federal, State, and local laws or requirements for the protection of the environment. This action and its associated analysis are in compliance with all applicable laws, regulations, policy, and Forest Plan direction.

VII. IMPLEMENTATION

If no appeals are filed within the 45 day appeal period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. Implementation of the project, under the terms of this decision would likely begin in August, 2012.

VIII. ADMINISTRATIVE REVIEW & APPEAL

Only individuals or organizations that submitted comments during the comment period may appeal. A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the Bozeman Chronicle, Bozeman, Montana. It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication date of the legal notice of the decision in the newspaper of record is the exclusive means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source.

Paper appeals must be submitted to: USDA Forest Service, Northern Region, ATTN: Appeal Deciding Officer, P.O. Box 7669, Missoula, MT 59807; or USDA Forest Service, Northern Region, ATTN: Appeal Deciding Officer, 200 East Broadway, Missoula, MT 59802. Office hours: 7:30 a.m. to 4:00 p.m. Fax (406) 329- 3411.

Electronic appeals must be submitted to: <appeals-northern-regional-office@fs.fed.us>. In electronic appeals, the subject line should contain the name of the project being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, Word Perfect, or Rich Text Format (RTF).

It is the appellant's responsibility to provide sufficient project- or activity-specific evidence and rationale, focusing on the decision, to show why the decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, the appeal must meet the content requirements of 36 CFR 215.14, and include the following information: The appellant's name and address, with a telephone number, if available; A signature, or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal); When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request; The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision; The regulation under which the appeal is being filed, when there is an option to appeal under either 36 CFR 215 or 36 CFR 251, subpart C; Any specific change(s) in the decision that the appellant seeks and rationale for those changes; Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement; Why the appellant believes the Responsible Official's decision failed to consider the substantive comments; and, How the appellant believes the decision specifically violates law, regulation, or policy.

If you have any questions regarding this decision, please contact Clint Sestrich, Fisheries Biologist, Yellowstone Ranger District, Gallatin National Forest, 5242 Hwy 89 South, Livingston, MT 59047 or phone (406) 823-6067.

/s/ Mary Erickson
Mary Erickson
Forest Supervisor

6/19/12
DATE



APPENDIX A

**Pesticide Use Proposal
(FS-2100-2)**

PESTICIDE - USE PROPOSAL (Reference FSM 2150)	DEPARTMENT/ AGENCY Montana Fish, Wildlife, & Parks	CONTACT/PHONE NO. Jeremiah Wood 406.328.4594	
	REGION Northern	FOREST Gallatin NF and Absaroka-Beartooth Wilderness	DATE SUBMITTED 4-5-12
	1) OBJECTIVE a) Project No. b) Specific Target Pest c) Purpose	Treatments on the Gallatin NF and the Absaroka-Beartooth Wilderness b. Rainbow trout and Rainbow trout X Yellowstone cutthroat trout hybrids – all life stages c. Eliminate non-native fish species to eliminate source of genetic contamination and restore native Yellowstone cutthroat trout in the upper Boulder River watershed.	
	2) PESTICIDE a) Common Name b) Formulation c) % AI, AE, or lb / Gal. d) Registration No.	a. Rotenone (CFT Legumine) b. liquid c. 5%, 11.1% associated resins d. 75338-2	
3) a) Form Applied b) Use Strength (%) or Dilution Rate c) Diluent	a. liquid b. 5% solution, 5% associated resins c. 90% inert ingredients including 10% N-Methylpyrrolidone		
4) lbs. AI Per Acre or Other Rate	1 part per million		
5) APPLICATION a) Method b) Equipment	a. In streams only: constant flow drip station and backpack sprayers; No Lake Treatments. b. Constant head drip station and standard pesticide backpack sprayer;		

<p>6)</p> <ul style="list-style-type: none"> a) Acres or Other Unit to be Treated b) Number of Applications c) Number of Sites d) Specific Description of Sites 	<ul style="list-style-type: none"> a. Approximately 18.5 total miles of stream of which 18.25 miles are in wilderness. b. Fourmile and Meatrack Creek will be treated in 2012 with a potential followup application in 2013. Rainbow Creek and East Fork Boulder River will be treated in 2013. Drip stations in the stream will apply chemical for a duration of 4-8 hours. c. Number and spacing of application sites will be dependent on bioassay experiments performed in the stream prior to treatment. d. The specific locations of the drip station will be determined through bioassay which will reveal the natural breakdown rate of the chemical in the stream. The 2012 treatment will begin at the outlet of Silver and Prospect Lakes and extend downstream to a high gradient reach at the lower end of Fourmile Creek. The 2013 treatment will begin at the outlet of Mirror and Rainbow Lakes and extend downstream three miles past the Rainbow Creek / East Fork Boulder River confluence.
<p>7)</p> <ul style="list-style-type: none"> a) Month(s) of Year b) States 	<ul style="list-style-type: none"> a. August-September 2012 and 2013 b. Montana
<p>8) SENSITIVE AREAS</p> <ul style="list-style-type: none"> a) Areas to be Avoided b) Areas to be Treated with Caution 	<ul style="list-style-type: none"> a. none b. none

9) REMARKS

- a) Precautions to be Taken
- b) Use of Trained / Certified Personnel
- c) State and Local Coordination
- d) Other Pesticides Being Applied to Same Site
- e) Monitoring
- f) Other

- a. Standard Personnel Protective Equipment will be used
- b. Certified pesticide applicator as licensed by Montana Dept. of Agriculture. Involved personnel will be trained in use, application, safety, and treatment prior to application. Project reviewed by MFWP and USFS biologists.
- c. MFWP and GNF. Public comment period May 20th to June 20th, 2011. Montana DEQ received copy of EA May 2011.
- d. None.
- e. To ensure the rotenone treatment was successful and amphibian and invertebrate populations were not adversely affected, fish, amphibian, and invertebrate monitoring would take place in the stream treatment areas before and after project implementation. Pre-project fish data are already available. Post-project fish monitoring would consist of electrofishing and visual surveys at multiple locations to ensure that no fish survived the treatment. Invertebrate monitoring would include pre- and post-project kick net samples that would be preserved in alcohol and sent to a laboratory for identification. Complete invertebrate recovery is expected to be achieved 2 years after project completion. Amphibians would be monitored through visual surveys at multiple locations in the treatment area before and after treatment. Several years after project completion, after several generations of fish had the opportunity to reproduce, fish would be collected for genetics analysis to determine their level of YCT purity.
- f. Project is being conducted cooperatively between MFWP and GNF.

Approval (Signatures of Approving Official)
/s/

Date (mm/dd/yy):

APPENDIX B

Minimum Requirements Decision Guide



HUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE

WORKSHEETS

Yellowstone Cutthroat Trout Restoration in the Upper Boulder River Watershed

*"... except as necessary to meet minimum requirements for the administration of
the area for the purpose of this Act..."*

– the Wilderness Act, 1964

Please refer to the accompanying MRDG Instructions for filling out this guide.
The spaces in the worksheets will expand as necessary as you enter your response.

Step 1: Determine if any administrative action is necessary.

Description: Briefly describe the situation that may prompt action.

The Montana Department of Fish, Wildlife and Parks and the Gallatin National Forest are working cooperatively to re-establish native pure Yellowstone cutthroat trout (YCT) populations. YCT historically occupied 17,721 miles of habitat in the western U.S. Today Yellowstone cutthroat trout (YCT) currently occupy 7,528 miles (43%) of their historic stream habitats. Only 3,000 miles (17%) of these historic streams contain genetically unaltered YCT. In Montana, YCT occurs in only 34% of its historic range, with unhybridized YCT confirmed in only 35% of this occupied habitat (FWP fisheries database). Introduction of non-native fish species, irrigation, agricultural, timber, and mining practices, and over-harvesting have been causes of YCT declines. YCT have been petitioned for listing under the Endangered Species Act though the USFWS has determined listing not warranted at this time. YCT are a Species of Special Concern in the state and on the

Region 1 Sensitive Species List for the US Forest Service. This species' conservation needs include maintaining genetic integrity, habitat and population expansion and protection.

Above Natural Bridge Falls, the Boulder River fishery is a reflection of fish species that were historically stocked in the river, its tributaries, and headwater lakes which were all probably fishless. The Boulder River and its tributaries above Hawley falls currently support mixed populations of genetically pure Yellowstone cutthroat trout, rainbow trout, and various degrees of hybrids of the two species. The lack of nonnative brook trout and brown trout in this watershed is a remarkable feature, as most Yellowstone cutthroat trout populations suffer threats from these invasive species. Nonnative rainbow trout have the ability to interbreed with YCT. This mechanism of hybridization creates serious threats to the long-term persistence of genetically pure YCT, but in some areas it can create opportunities for YCT restoration. Unlike brown trout and brook trout, which must be completely removed from an entire drainage to ensure long-term YCT persistence, rainbow trout can be removed over time via population reduction combined with genetic swamping. This method has been shown to be very successful in high mountain lakes, but is yet to be proven effective in streams. Because brook trout and brown trout do not exist in the Boulder River or its tributaries and lakes upstream from Hawley Falls, and the falls prevent them from invading the drainage, the only obstacle to securing a healthy metapopulation of YCT in the upper Boulder is the presence of rainbow trout. The proposed action would work to eliminate rainbow trout from the river system via a combination of direct fish removal (gill netting, piscicide application) and genetic swamping (conversion from rainbow trout or hybrids to YCT whereby intensively stocked YCT interbreed with remaining rainbow trout or hybrids). This project is part of an overall plan to establish a genetically pure, self-sustaining population of Yellowstone cutthroat trout in the large, interconnected upper Boulder river system. A previous project, completed in 2009, successfully replaced the rainbow trout population in Silver and Prospect lakes (Fourmile Creek drainage) with YCT. The waters proposed for this treatment are the primary remaining sources of rainbow trout genetics in the entire area. By replacing them with genetically pure YCT, the entire upper Boulder River Drainage (over 40 continuous miles of stream) will trend toward being composed of a large metapopulation of YCT. Such opportunities for large-scale recovery of interconnected YCT populations of high genetic purity are increasingly rare within the species native range and are essential for long-term persistence of the species.

Montana Fish, Wildlife & Parks in cooperation with the Gallatin National Forest is proposing to replace existing rainbow trout fisheries in the upper Boulder River drainage (south of Big Timber) with Yellowstone cutthroat trout (YCT). Rainbow trout would be removed from Fourmile Creek and part of Meatrack Creek, the six Rainbow Lakes, Mirror Lake, and Rainbow Creek. All but the lower 1/3 mile of Fourmile Creek occur within the Absaroka-Beartooth Wilderness. Rainbow trout removal would take place by gill netting and genetic swamping via intensive aerial stocking in the lakes and rotenone application in approximately 18.5 miles of flowing water. Compared to other piscicides, rotenone is relatively inexpensive and accessible, and has been routinely used to remove unwanted fish from lakes and streams. Rotenone acts by blocking the ability of tissues to use oxygen, which causes fish to asphyxiate quickly. Yellowstone cutthroat trout would be stocked in the treated waters for several years to establish self-sustaining populations.

With the exception of aerial stocking via helicopter, no motorized equipment would be used for the project. Per the Cooperative Agreement for Fish, Wildlife and Habitat Management on National Forest Wilderness Lands in Montana, "Aerial stocking of fish shall be permitted for those waters in wilderness where this was an established practice before wilderness designation." Rainbow Lakes are known as having been the first lakes aerially stocked in Montana (Jeremiah Wood, FWP, Personal Communication). Former A-B mountain lakes expert and FWP fish biologist Pat Marcuson describes the 1939 aerial plants on the Lake Plateau in his book "Fishing the Beartooths". This use predated the 1978 designation of the Absaroka Beartooth Wilderness. To affectively "swamp" out rainbow trout genes, aerial stocking of rainbow and mirror lakes with YCT would occur once annually via helicopter for up to ten years. The fish populations in rainbow and mirror lakes have been self-sustaining and stocking has been infrequent. Therefore annual stocking to achieve genetic swamping would be at a higher frequency than has occurred.

Because fish would be dropped from the air, no landings would occur within wilderness. A local backcountry horsemen group would assist in packing gear. Crews would practice minimum-impact camping techniques and would comply with all food storage orders to reduce wilderness impacts. Dead fish carcasses would be disposed of by allowing to sink to the bottom of treated waters and decompose. Signs would be posted at the trailheads to inform wilderness users of the objectives of the project, its importance, and techniques used to accomplish the objectives. Personnel will make an extra effort to inform visitors about the project and its purpose.

This project would convert rainbow and rainbow/cutthroat hybrid trout populations in 7 mountain lakes and 18.5 miles of stream to genetically pure YCT. While remaining YCT populations are rare, populations in large, interconnected reaches of stream like the upper Boulder River are essentially nonexistent. The upper Yellowstone River system supports a large, interconnected YCT population, but nonnative fishes such as brown, rainbow and brook trout are continual threats. YCT are expected to perform as well as, or better than, rainbow trout that currently exist in the project area, maintaining a popular sport fishery while promoting a native species. Overall, this project would help achieve the goals and objectives listed in the "Conservation Agreement for Yellowstone Cutthroat Trout within Montana" (Range Wide YCT Conservation Team 2009) both statewide and locally. The social benefit of this effort would be the preservation of this beautiful and rare fish species and population, and the ability of future generations of people to use and enjoy this native species in its natural habitat.

To determine if administrative action is necessary, answer the questions listed in A - F on the following pages.

A. Describe Options Outside of Wilderness

Is any action necessary within wilderness?

Yes: ☒ No: ☐

Explain: This project would convert rainbow and rainbow/cutthroat hybrid trout populations in 7 mountain lakes and 18.5 miles of stream to genetically pure YCT. By replacing these nonnatives with genetically pure YCT, the entire system will eventually trend toward being composed of a large metapopulation of YCT. Such opportunities for large-scale YCT recovery are increasingly rare. Degraded and fragmented habitat and lack of natural, long term migrations barriers (falls) reduces the potential to establish YCT populations within the Yellowstone River drainage outside of wilderness and the National Forest, especially off Forest on private land.

B. Describe Valid Existing Rights or Special Provisions of Wilderness Legislation

Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that allows consideration of the Section 4(c) prohibited uses? Cite law and section.

Yes: ☒ No: ☐ Not Applicable: ☐

Explain: No Section 4(c) prohibited uses are being requested. Section 4d(8) of the Wilderness Act recognizes the role of state fish and wildlife agencies in management of populations in wilderness. What is being requested is chemical treatment of stream reaches for fisheries management. Management actions within wilderness may be conducted to re-establish or perpetuate an indigenous species adversely affected by human influence or perpetuate or recover a threatened or endangered species. The presence of previously stocked rainbow trout in the upper Boulder River drainage has compromised the genetic integrity of the native YCT population resulting in a downstream source of hybridization in the middle and lower reaches. This project would involve removing the existing non-native and hybridized fish in the East Fork and Fourmile subwatersheds.

C. Describe Requirements of Other Legislation

Is action necessary to meet the requirements of other laws?

Yes: ☒ No: ☐ Not Applicable: ☐

Explain:

Explain: While YCT have been petitioned for listing under the Endangered Species Act though the USFWS they have determined listing is not warranted at this time. YCT are a Species of Special Concern in the state and on the Sensitive Species List for the FS Region 1 and conservation needs should be taken into account so that listing is prevented under the Endangered Species Act. The species' conservation needs include maintaining genetic integrity,

habitat and population expansion and protection. This project will help further these conservation needs.

State law 78 Stat. 896 (8) describes state jurisdiction in managing fish and wildlife within wilderness in the national forests in cooperation with the U.S., Forest Service.

D. Describe Other Guidance

Is action necessary to conform to direction contained in agency policy, unit and wilderness management plans, species recovery plans, or agreements with tribal, state and

Yes: ☒

No: ☐

Not Applicable: ☐

Explain:

This proposed project conforms to direction in the Policies and Guidelines for Fish and Wildlife Management in National Forest and Bureau of Land Management Wilderness (FSM 2323.32 #5). These guidelines for fish and wildlife management in U.S. Forest Service administered wilderness areas indicate that: Chemical treatment may be necessary to prepare waters for the reestablishment of indigenous fish species, consistent with approved wilderness management plans, to conserve or recover federally listed threatened or endangered species, or to correct undesirable conditions resulting from human activity. Proposals for chemical treatments will be considered and may be authorized by the Federal administering agency through application of the MRDP as outlined in Section E., General Policy. Any use of chemical treatments in wilderness requires prior approval by the Federal administering agency.

Guidelines for Chemical Treatment

- a) Use only registered pesticides according to label directions.
- b) In selecting pesticides, give preference to those that will have the least impact on non target species and on the wilderness environment.
- c) Schedule chemical treatments during periods of low human use, insofar as possible.

Immediately dispose of fish removed in a manner agreed to by the Federal administering agency and the State agency.

In addition, in a Memorandum of agreement for conservation and management of Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*) among Montana, Idaho, Wyoming, Nevada, Utah, U.S Forest Service, Yellowstone National Park, and Grand Teton National Park (2000) we agreed to the following goals and objectives:

- Goal: Ensure the persistence of the Yellowstone cutthroat trout subspecies within its historic range. Manage YCT to preserve genetic integrity and provide adequate numbers and populations to provide for protection and maintenance of intrinsic and recreational values associated with this fish.
- Objective 2. Secure and enhance conservation populations
 - Identify genetic purity of existing populations. Prioritize populations based on genetic purity, population size, unique characteristics, and management goals. Secure and if necessary enhance all known and suspected genetically pure YCT populations, and high priority introgressed populations. These efforts might include, but are not limited to:
 - Expansion of current populations within the context of their streams and

watersheds.

- Objective 3. Restore populations. Increase the number of stream populations by restoring YCT within their native range. Local restoration goals and approaches will be developed to meet this objective.

E. Wilderness Character

Is action necessary to preserve one or more of the qualities of wilderness character including: untrammeled, undeveloped, natural, outstanding opportunities for solitude or a primitive and unconfined type of recreation, or unique components that reflect the character of this wilderness area?

Untrammelled: Yes: ☐ No: ☒ Not Applicable: ☐

Explain: ;This project will be a short term trammeling of wilderness during the period when the fish species and water quality are manipulated and controlled.

Undeveloped: Yes: ☐ No: ☒ Not Applicable: ☒

Explain: The project does not change this quality, as no development or permanent improvements will occur as a result of the project and motorized equipment will not be used.

Natural: Yes: ☒ No: ☐ Not Applicable: ☐

Explain: Replacing the rainbow trout and hybridized fishery with pure YCT is necessary to improve the naturalness of this area and restore the species native to the drainage. This project contributes to the conservation of a native species, which is ecologically adapted to the area. Removing rainbow trout and hybridized YCT and replacing with pure YCT improves naturalness and not only preserves this quality but restores it by removing previously stocked rainbow trout in portions of the upper East Fork Boulder River and Fournile Creek drainages.

Outstanding opportunities for solitude or a primitive and unconfined type of recreation:

Yes: ☐ No: ☐ Not Applicable: ☒

Explain: Removing rainbow trout and hybridized YCT and replacing with pure YCT will provide wilderness visitors an opportunity to catch trout native to the drainage. Thus, nearly identical opportunities will be present before and after the project is complete.

Other unique components that reflect the character of this wilderness:

Yes: ☐ No: ☒ Not Applicable: ☐

Explain: This chemical treatment would have negligible impacts on any unique value not already accounted for in the four mandatory values.

F. Describe Effects to the Public Purposes of Wilderness

Is action necessary to support one or more of the public purposes for wilderness (as stated in Section 4(b) of the Wilderness Act) of recreation, scenic, scientific, education, conservation, and historical use?

Recreation: Yes: ☐ No: ☒ Not Applicable: ☐

Explain: Action is not necessary to support the recreation public purpose because recreational opportunities will remain largely as they are now. Removal of hybridized YCT and restoring non-hybridized YCT will allow anglers an opportunity to catch genetically pure trout native to the drainage. During the two-year restoration period, there may be a temporary decrease in number of large fish available to anglers in Rainbow and Mirror Lakes and a short-term loss of fishing opportunity in project area streams.

Scenic: Yes: ☐ No: ☒ Not Applicable: ☒

Explain: This action will have no affect on the scenic value of the area.

Scientific: Yes: ☐ No: ☒ Not Applicable: ☐

Explain: This project may add to the scientific base of knowledge regarding the establishment of native populations, non-native fish removals and species interactions but this is not a reason to take action in wilderness.

Education: Yes: ☐ No: ☒ Not Applicable: ☒

Explain:

Conservation: Yes: ☒ No: ☐ Not Applicable: ☐

Explain: This action will establish another conservation population of YCT and help ensure the persistence of one conservation population of YCT in the upper Boulder River. This action would result in about 19 miles of continuous YCT stream habitat helping to conserve the species.

Historical use: Yes: ☐ No: ☐ Not Applicable: ☒

Explain: This action will have no affect on the historic value of the area.

Decision: Is any administrative action necessary in wilderness?

Yes: ☒ No: ☐ More information needed: ☐

Explain: The distribution and abundance of YCT has been greatly reduced since European settlement. Nonnative rainbow trout threaten the long-term persistence of YCT in the Boulder River drainage. Until sources of hybridization are addressed in the upper Boulder River drainage in wilderness, attempts to restore YCT outside of wilderness within the Boulder River drainage are futile. This is because fish in high gradient streams tend to disburse in a downstream direction. Removing rainbow trout and hybridized YCT and restoring with pure YCT would establish a new conservation population of this imperiled species, would reduce the downstream risk of hybridization in the Boulder River, and contribute to conservation of a species to avoid future listing under the ESA. This action would result in about 18 stream miles of secure YCT stream habitat and secure populations in seven lakes. Most importantly this project will help restore natural conditions in the wilderness and help preserve wilderness character.

If action is necessary, proceed to Step 2 to determine the minimum activity.

Step 2: Determine the minimum activity.

Please refer to the accompanying MRDG Instructions for an explanation of the effects criteria displayed below.

Description of Alternatives

For each alternative, describe what methods and techniques will be used, when the activity will take place, where the activity will take place, what mitigation measures are necessary, and the general effects to the wilderness resource and character.

Alternative # 1-No Action

Description: No Action

The rainbow trout and hybridized YCT would not be removed from the upper Boulder watershed. Creek.

Effects: The predicted consequence of the "no action" alternative is a high probability that the shift to a system dominated by rainbow trout genetics will continue to develop. Rainbow trout continually moving downstream from Rainbow lakes and Mirror Lake, Rainbow Creek, and Fourmile Creek will mix with the populations of rainbow/YCT hybrids and genetically pure YCT. The balance of genetic contribution to this metapopulation would likely continue to shift toward rainbow trout. The upper Boulder River currently contains genetically pure YCT populations in several reaches of stream, all of which are critical to the long-term persistence of the species in the Yellowstone River drainage as a whole. No action would continue to expose the threat of these populations losing their identity as YCT through hybridization. The 22 lakes and streams would continue to provide quality fisheries for rainbow trout and rainbow/YCT hybrids, but some areas may experience a decline in opportunity to fish for native YCT.

Wilderness Character

"Untrammelled"

Previous trammeling of the wilderness through the introduction and stocking of rainbow trout would continue to have impacts on native species.

"Undeveloped"

Under this Alternative there would be no effect on the undeveloped wilderness character of the upper Boulder watershed.

"Natural"

Not removing rainbow trout and YCT hybrids would continue to reduce the naturalness of this area. The hybridized YCT and RBT would continue to threaten the population of non-hybridized population of YCT.

"Outstanding opportunities for solitude or a primitive and unconfined type of recreation"

There would be no effect on opportunities for solitude or a primitive and unconfined type of recreation.

Other unique components that reflect the character of this wilderness

NA

Heritage and Cultural Resources

NA

Maintaining Traditional Skills

NA

Special Provisions

NA

Economic and Time Constraints

NA

Additional Wilderness-specific Comparison Criteria

NA

Safety of Visitors, Personnel, and Contractors

NA

Alternative # 2-Removal of Rainbow Trout Using Only Piscicides

Description: A second alternative to the proposed action (removing rainbow trout using netting in the lakes and piscicide in the streams) would be to remove rainbow trout from both lakes and streams using piscicides and then restocking with genetically pure YCT.

Proper permits for chemical treatment would be obtained and applied in order to meet the direction and intent of the Federal Water Pollution Control Act (Clean Water Act). The state would provide certified applicators and would strictly adhere to application directions and guidance. The piscicide and application equipment would be transported into the job site by pack stock and helicopter and applied by hand and motorized pumps using PPE prescribed in the JHA. Crews would camp at existing campsites designated by the Forest Service and follow LNT practices to minimize impact.

Effects: This alternative would have several advantages. Most importantly, it would ensure that all fish were removed from the lakes and would not require multiple years of helicopter stocking YCT to ensure genetic swamping and replacement by YCT. Piscicide can be 100% effective, while gill netting (as described in the preferred alternative) usually is not. Once fish were completely removed from the lakes and the chemical detoxified, genetically pure YCT could be aerially stocked. They would have no rainbow trout to compete and/or breed with and would thrive. This alternative would have short-term impacts on non-target organisms (gill-breathing invertebrates). Recent studies have shown that these impacts are very short-lived, and are ameliorated within a year. Because this alternative would require mobilization of a large amount of chemical and equipment via helicopter landings in wilderness over a period of several weeks there would be temporary impacts to wilderness character.

Wilderness Character

"Untrammeled"

The proposed treatment would by definition affect the untrammeled nature of the upper Boulder project area in the short term by introducing human manipulation within the wilderness ecosystem.

Mobilization of the large amount of rotenone needed to effectively treat lakes would require hundreds of pack stock animal days or helicopter use in wilderness. It would also require the use of mechanized equipment such as generators and motorized pumps to apply the chemical in the lakes, which would all have to be transported to the site via stock or helicopter. Very high stock use could cause damage to the trails and vegetation in the area, which is not consistent with wilderness values and habitat conservation. The use of a helicopter for such activities in designated wilderness is prohibited without special permission from the U.S. Forest Service. This short term trammeling would be beneficial in the long term by removing non-native and hybridized fish and replacing them with a native species. It would also correct previous trammeling that occurred when non-native rainbow trout were introduced and stocked.

"Undeveloped"

Under this Alternative there would be no effect on the undeveloped wilderness character of the upper Boulder project area.

"Natural"

In the long term, this Alternative would improve the naturalness of the treatment area by restoring fish native to the drainage and removing non-native species previously introduced and stocked. In the short term, the natural conditions of the wilderness would be impaired by motorized mechanical application of chemical piscicide. Rotenone is specific to gilled aquatic organisms and has no known adverse affects to other flora and fauna.

"Outstanding opportunities for solitude or a primitive and unconfined type of recreation"

This Alternative would have short term impacts on recreation. During the Rotenone treatment there would be a period of approximately two weeks in which removal efforts could impact visitors. The treated stream reaches and lakes would be fishless for approximately 20 months from the time of initial treatment until stocking of pure YCT would occur. Recreational fishing would be eliminated from the lakes for 1-2 years, until reintroduced YCT grew to catchable size. Restoring pure YCT to the upper Boulder project waters would have long term positive impacts on opportunities for outdoor recreation by providing individuals with an opportunity to catch trout native to the drainage.

Other unique components that reflect the character of this wilderness

There would be no effect on any other unique components that reflect the character of the Absaroka Wilderness.

Heritage and Cultural Resources

No impacts to heritage or cultural resources are anticipated.

Maintaining Traditional Skills

Stock transport skills will be used to move workers and materials in and out of the wilderness.

Special Provisions

NA

Economic and Time Constraints

Given the amount of time (packstock) or expense (helicopter) to deliver equipment and effectively treat lakes with rotenone, this alternative would require more time, personell, and expense than the preferred alternative. However, this alternative would not require as many personnel or time to implement as the mechanical removal alternative and would have a much higher likelihood for success.

Additional Wilderness-specific Comparison Criteria

This alternative has the highest likelihood of successfully completing this project for conservation of YCT but would have a greater temporary impact on values related to wilderness character than the preferred alternative as described above.

Safety of Visitors, Personnel, and Contractors

There is a risk to workers from transporting and applying chemical piscicide but this alternative is safe assuming all practices and equipment prescribed in the JHA are followed and used. Fewer personnel are required, and for much shorter duration, than for the mechanical removal alternative.

Alternative # 3-Removal of Rainbow Trout Using No Piscicides (mechanical)

Description: Mechanical removal of hybridized YCT and RBT utilizing gill nets in the lakes and electrofishing in the streams and reestablishment of slightly-to-non introgressed YCT through stocking / genetic swamping. Under the mechanical removal alternative, teams of workers would use battery operated, backpack-mounted electro fishers and gill nets to remove all fish from the treatment stream reaches and lakes, respectively.

Workers and materials would be transported into the job site by pack stock. All treatment work would be accomplished by hand using battery powered fish shockers and gill nets following practices and using PPE prescribed in the JHA. Crews would camp at existing campsites designated by the Forest Service and follow LNT practices to minimize impact.

Effects: Fish removal in the lakes with gill netting would not ensure complete removal, but could be done effectively. Intensive netting could remove 75% or more of the fish population in the lakes in a relatively short time (1-2 weeks). Over time, subsequent genetic swamping through intensive annual stocking of genetically pure YCT would skew the genetic composition toward YCT. This method has been shown to be very successful in high mountain lakes, but is yet to be proven effective in streams.

Fish removal in the streams using electrofishing would be much less effective and less feasible than with piscicide application. FWP has tried to remove fish through intensive electrofishing effort in other areas, but unlike using piscicide, complete fish removal is almost never possible with electrofishing. While fish removal efficiencies are much lower with electrofishing than with piscicide for all sizes of fish, this is especially pronounced in smaller size classes of trout, which are extremely difficult to capture using electricity. Because of capture inefficiency, many of these fish are missed during removal efforts and quickly fill in habitat vacated by the larger fish being removed. Oftentimes this results in a population returning to pre-removal levels in just 1-2 years after project completion (Meyer et al. 2006).

The remoteness, rough terrain, and extent of habitat, over 18 miles of stream, makes electrofishing even less feasible than electrofishing removal efforts elsewhere. A minimum of 2 to 3 electrofishing passes using a backpack unit with 2 to 3 individuals per crew would be required. The entire length and width of the stream would have to be intensively electrofished. This would equate to several people walking through approximately 40 to 60 miles of stream removing fish. Large crews and numerous electrofishing units would be required. Off-trail activity and fish and wildlife habitat disturbance would be much greater using this alternative. While piscicide application only requires entry into the stream and riparian area every ½ to 2 miles on one occasion, electrofishing removal would require the entire length of all stream be walked through multiple times by multiple people for multiple years. This is because electrofishing removal efforts are seldom successful, which means

that re-entry into the system for subsequent electrofishing efforts would probably be necessary.

Wilderness Character

“Untrammelled”

The proposed treatment would by definition affect the untrammelled nature of the upper Boulder project area in the short term by introducing human manipulation within the wilderness ecosystem. Annual helicopter fish stocking to achieve genetic swamping would have a short term impact on wilderness character. This short term trammeling would be beneficial by reducing the abundance of non-native and hybridized fish and replacing them with a native species. It is uncertain whether electrofishing removal would reverse previous trammeling that occurred when non-native rainbow trout were introduced and stocked.

“Undeveloped”

Under this Alternative there would be no effect on the undeveloped wilderness character of Dead Indian Creek.

“Natural”

This Alternative would improve the naturalness of the treatment area by temporarily increasing the relative abundance of native fish in the drainage. It is uncertain whether native fish would be restored over the long-term.

“Outstanding opportunities for solitude or a primitive and unconfined type of recreation”

Under this Alternative more personnel would be needed for a longer time period to try to effectively remove hybridized YCT and RBT. This would be in addition to annual helicopter stocking. Thus outstanding opportunities for solitude would be impacted on a greater degree than under the other action alternatives. Because mechanical fish removal is much less effective than piscicide, angling opportunities would persist but with lower catch rates. Restoration of a native YCT fishery is less likely under this alternative.

Other unique components that reflect the character of this wilderness

There would be no effect on any other unique components that reflect the character of the Absaroka Wilderness.

Heritage and Cultural Resources

No impacts to heritage or cultural resources are anticipated.

Maintaining Traditional Skills

NA

Special Provisions

NA

Economic and Time Constraints

This alternative would greatly increase the time involved and would probably not result in successfully removing all non-native trout. As a result, the treatment stream reaches could become hybridized fisheries again. Finally, execution of this option would result in greater costs over the long-run, and would be much less cost-effective.

Additional Wilderness-specific Comparison Criteria

This alternative would have a greater impact over a greater length of time to wilderness character than the other methods being considered to remove fish because the project has a reduced

chance of success and workers will be working in the stream for longer and repeated periods of time.

Safety of Visitors, Personnel, and Contractors

Under this Alternative safety would be a concern for treatment personnel due to the significantly increased wading time in steep, boulder-strewn streams, carrying heavy equipment. This alternative is safe assuming all practices and equipment prescribed in the JHA are followed and used. More personnel are required, and for a longer duration, than for alternatives that use a piscicide.

Alternative # 4-Removal Using Netting in Lakes and Piscicide in Streams (Preferred Alternative)

Description: The fourth, and preferred alternative involves removing hybridized YCT and rainbow trout using gill netting in the lakes and the piscicide rotenone in streams and reestablishment of a YCT population with at least 90% genetic purity through intensive stocking / genetic swamping annually for several years.

Workers and materials would be transported into the job site by pack stock. All treatment work would be accomplished by hand using gill nets, drip stations, and backpack sprayers following practices and using PPE prescribed in the JHA. Crews would camp at existing campsites designated by the Forest Service and follow LNT practices to minimize impact.

Proper permits for chemical treatment would be obtained and applied in order to meet the direction and intent of the Federal Water Pollution Control Act (Clean Water Act). The state would provide certified applicators and would strictly adhere to application directions and guidance.

Effects: Intensive gill netting could remove 75% or more of the fish population in the lakes in a relatively short time (1-2 weeks). This would allow the newly stocked YCT an opportunity to establish a population with less competition, while still providing some angling opportunity for catchable rainbow trout during this period. Over time, subsequent genetic swamping through intensive annual stocking of genetically pure YCT would skew the genetic composition toward YCT. This method has been shown to be very successful in high mountain lakes, but is yet to be proven effective in streams.

Chemical treatment of Fourmile and Meatrack Creeks would be approximately 1 week in duration in 2012 with some minimal potential for a 1 week follow up treatment in 2013. Rainbow Creek and East Fork Boulder River would be treated in 2013 with a 1 week period for implementation. There would be short-term impacts to non-target organisms (gill-breathing invertebrates). Recent studies have shown that these impacts are very short-lived, and are ameliorated within a year. Compared to electrofishing, piscicide treatment of streams would require fewer personnel, much less time, and would have a much higher likelihood of success. The ultimate level of genetic purity achieved through this alternative is potentially lower than the piscicide only alternative because rainbow trout and hybrids which survive the gill netting effort in lakes: a) will continue to influence the genetic composition of the lake populations to some degree; and b) could recolonize chemically treated stream reaches downstream. However, this approach is preferred as it is the most cost effective practicable alternative with the least potential for temporary impacts to wilderness character.

Wilderness Character

“Untrammeled”

The proposed treatment would by definition affect the untrammeled nature of the upper Boulder project area in the short term by introducing human manipulation within the wilderness ecosystem. The annual aerial stocking of YCT in Rainbow and Mirror Lakes for 7 to 10 years would be of a higher frequency than currently exists. This short term trammeling would be beneficial in the long term by removing non-native and hybridized fish and replacing them with a native species. It would also correct previous trammeling that occurred when non-native rainbow trout were introduced and stocked.

“Undeveloped”

Under this Alternative there would be no effect on the undeveloped wilderness character of the upper Boulder project area.

“Natural”

In the long term, this Alternative would improve the naturalness of the treatment area by restoring fish native to the drainage and removing non-native species previously introduced and stocked. In the short term, the natural conditions of the wilderness will be impaired by introduction of the chemical piscicide. Rotenone is specific to gilled aquatic organisms and has no known adverse affects to other flora and fauna.

“Outstanding opportunities for solitude or a primitive and unconfined type of recreation”

Impacts to recreation related to this Alternative would be minimal and of short duration. During the Rotenone treatment there would be a period of less than one week in 2012 and one week in 2013 which removal efforts may impact visitors. Treated stream reaches, which receive relatively little angling pressure, will be stocked soon after treatment, but fish will not begin to reach catchable size until the following summer. Impact to the fisheries in lakes will also be minimal. Healthy YCT populations which are now established in Silver and Prospect Lakes above Fourmile Creek will continue to provide an opportunity for fishing. Fish which survive the gill netting effort in Mirror and Rainbow Lakes will continue to provide an angling opportunity for the public until stocked YCT reach a catchable size. Upper rainbow lakes were stocked with YCT in 2011 and stocked fish may attain catchable size in summer 2012. Because aerial stocking will occur once annually for up to 10 years, there will be a brief annual impact to solitude. Restoring pure YCT to the project area lakes and streams would have long term positive impacts on opportunities for outdoor recreation by providing individuals with an opportunity to catch trout native to the drainage.

Other unique components that reflect the character of this wilderness

There would be no effect on any other unique components that reflect the character of the Absaroka Wilderness.

Heritage and Cultural Resources

No impacts to heritage or cultural resources are anticipated.

Maintaining Traditional Skills

Stock transport skills will be used to move workers and materials in and out of the wilderness.

Special Provisions

NA

Economic and Time Constraints

This alternative is less expensive than the piscicide only treatment because it: a) requires much less rotenone; b) requires fewer people for less time; and c) doesn't require mobilization of large amounts of rotenone and motorized application equipment via stock or helicopter. Both this alternative and the piscicide only alternative require far less effort than mechanical removal, and have a much higher probability of success.

Additional Wilderness-specific Comparison Criteria

This alternative has a lower likelihood of restoring genetically pure YCT to the entire project area than does the piscicide only alternative but minimizes impacts to wilderness character.

Safety of Visitors, Personnel, and Contractors

There is a risk to workers from transporting and applying chemical piscicide and deploying/retrieving gill nets, but this alternative is safe assuming all practices and equipment prescribed in the JHA are followed and used. Fewer personnel are required, and for much shorter duration, than for alternatives not using a piscicide.

Comparison of Alternatives

It may be useful to compare each alternative's positive and negative effects to each of the criteria in tabular form, keeping in mind the law's mandate to "preserve wilderness character."

	Alt - 1	Alt- 2	Alt - 3	Alt - 4
Untrammelled	- / +	- - / +	- / -	- / +
Undeveloped	NA	NA	NA	NA
Natural	-	- / +	- / -	- / +
Solitude or Primitive Recreation	NA	- / +	- / -	- / +
Unique components	NA	NA	NA	NA
WILDERNESS CHARACTER	- - +	- - - - + + +	- - - - -	- - - + + +

	Alt - 1	Alt- 2	Alt - 3	Alt - 4
Heritage & Cultural Resources	NA	NA	NA	NA
Maintaining Traditional Skills	NA	+	+	+
Special Provisions	NA	NA	NA	NA
Economics & Time	NA	-	-	+
Additional Wilderness Criteria	NA	- / +	-	+
OTHER CRITERIA SUMMARY	NA	- - + +	- - +	+++

	Alt - 1	Alt- 2	Alt - 3	Alt - 4
SAFETY	NA	- -	- -	-

Safety Criterion

If safety issues override impacts to wilderness character or other criteria, provide documentation that the use of motorized equipment or other prohibited uses is necessary because to do otherwise would cause increased risks to workers or visitors that cannot be satisfactorily mitigated through training, use of personal protective equipment (PPE), or other requirements to alleviate the safety risk. (This documentation can take the form of agency accident-rate data tracking occurrences and severity; a project-specific job hazard analysis; research literature; or other specific agency guidelines.)

Documentation: NA

Step 2 Decision: What is the Minimum Activity?

Please refer to the accompanying MRDG *Instructions* before describing the selected alternative and describing the rationale for selection.

Selected alternative: Alternative 4, Removal of hybridized YCT and RBT using netting in lakes and piscicide in streams.

Rationale for selecting this alternative (including documentation of safety criterion, if appropriate):

This is the most cost effective practicable alternative with the least potential for temporary impacts to wilderness values. Completing this project for the conservation of YCT improves the natural quality of wilderness character in the long term. It also meets the objectives for fish and wildlife management in FSM 2323.3 by helping to conserve a native species that has a potential for future listing under ESA. The short term negative effects to the untrammeled and natural qualities of wilderness character because of the manipulation of natural conditions through introduction of a chemical piscicide and annual helicopter stocking are balanced by the improved long term natural conditions of wilderness character through restoration of a native species.

Alternative 2, using piscicide only in lakes and streams has the highest likelihood for restoring genetically pure YCT throughout the project area but would require use of motorized equipment and helicopters in wilderness.

Alternative 3, using electro-shocking to remove the non-native fish in streams and gill netting in lakes would enhance the natural quality of wilderness character in the short term because chemicals (piscicide) would not be introduced into the system. But this alternative was not selected because it has far less chance of success and would have to be repeated if not successful which would set back restoration of natural conditions in wilderness.

Project Implementation Requirements and Mitigation:

The project will be timed to maximize effectiveness of treatment while minimizing disturbance to other aquatic species, wildlife, and visitors. Information about treatment operations will be posted at trailheads, national forest offices and on forest websites to inform visitors.

The safe transport and handling of piscicides and other equipment in wilderness will be accomplished according to practices described in the JHA.

All travel and camping practices will follow Leave No Trace principles and utilize routes and campsites selected by the Forest Service.

Monitoring and reporting requirements:




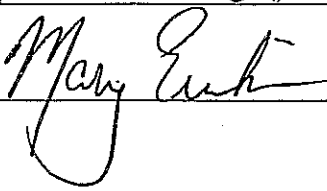
The state will report the amount of piscicide they ultimately use to complete this project to the state DEQ.

Monitoring and reporting requirements:

Fish populations in the upper Boulder River project area will be monitored cooperatively by the state and USFS to determine the success of the project as described in the Yellowstone cutthroat trout restoration in the upper Boulder River watershed EA.

Check any Wilderness Act Section 4(c) uses approved in this alternative:

- | | |
|---|--|
| <input type="checkbox"/> mechanical transport | <input type="checkbox"/> landing of aircraft |
| <input type="checkbox"/> motorized equipment | <input type="checkbox"/> temporary road |
| <input type="checkbox"/> motor vehicles | <input type="checkbox"/> structure or installation |
| <input type="checkbox"/> motorboats | |

Approvals	Signature	Name	Position	Date
Prepared by:		Clint Sestrich	East Zone Fisheries Biologist	6/15/12
Recommended:		Alex Sienkiewicz	District Ranger	6/15/12
Recommended:		Lauren Oswald	Deputy District Ranger	6/15/12
Approved by:		Mary Erickson	Forest Supervisor	6/18/12

APPENDIX C

**COMMENTS TO FWP REGARDING THE YELLOWSTONE CUTTHROAT
TROUT RESTORATION IN THE UPPER BOULDER RIVER WATERSHED
ENVIRONMENTAL ASSESSMENT**

Dear Mr. Wood,

Please add my email to your contact list, if you are contacting concerned people throughout the project duration. My Mother, Jeanne Greer, owns a cabin just South of Hawley Mountain guest ranch and a mile (?) north of Four Mile Campground. I am the only family member that consistently uses our property and in fact will be out there the week of 8/19/2011 to 8/26/2011.

I have grown up fishing that river and feel that I know it as well as anyone. The fishing in the last 10 years has been remarkable in both the size and quantity of fish caught, but I do not know why. Catching upward of 50 fish during an evening late summer hatch is not out of the question. Of the "many" fish I have caught, very few are rainbow, with most being hybrids. Have you considered removing the fish daily catch limits? Those fish are so easy to catch the locals would decimate the population in a few short years. Those waters have been regulated for at least the last 15 years, so that you can't keep any fish with yellow on the gills which from my unscientific catch rates is about 98% of all fish caught above the Falls on the Boulder.

It would seem in a time when the economy is so awful and the Gov't needs to stop spending money we can't afford, that a cheap solution in the intermediate term is to remove the catch limits. Feed the hungry and the underemployed and see what happens. If it doesn't make a significant difference you can poison the river in a few years, when hopefully the economy is better and such projects may make more political sense. It would also seem to be a pretty hard slap across the face for Hawley Mountain Guest ranch to decimate the fishing during what I can only assume is a tough time in their business with consumers tightening their belt. I know they have lost their hunting trade in the last few years, if word got out the fishing was over, how would their business survive?

As I write this response I am forming the opinion that this is a very ill timed project. Spending money on a controversial project, putting additional pressure on Hawley Mountain an employer and business that brings in out of state money, while not trying another alternative such as removing catch limits doesn't make sense. Let the locals fill up their freezers, save some money and do the project when the economy recovers if the priorities stay the same.

I live in Michigan, which takes its recreational fishing very seriously because of the tourism revenue it generates for the State. I have heard, unverified, of terrible accidents using rotenone. I know they say it doesn't hurt aquatic insects, but I am not sure that this is always the case. The mayfly population in the upper Boulder watershed is quite amazing! I am not an entomologist, but losing the mayflies and caddis flies would be devastating for years. I also believe that Rotenone has been linked to an increase in Parkinson's disease. There are almost always unintended consequences when altering an environment using an outside catalyst.

I certainly hope that you weigh all the options and consider other alternatives. I realize that once money is earmarked for a project, it is tough not to go ahead and spend the money because you may not have the funding in the future and it can affect your future budgets, but at some point we have to make a stand. Not that this is just about saving money, but it would seem that giving the locals a chance to ease their food budgets would boost the opinion and goodwill for your agency.

I wish you well and thank you for allowing the public input.

Best regards,
Jay W. Greer

Hi Jeremiah,
Just wanted to share our interest in the Cutthroat project. Hope all goes well, Mike

Jeremiah Wood
Montana FWP
2300 Lake Elmo Drive
Billings, MT 59105

Dear Jeremiah,

Beartooth Back Country Horsemen express our support for the Yellowstone Cutthroat Trout Restoration Project in the Upper Boulder River Watershed. We are concerned over possible new restrictions to public recreation should the Yellowstone Cutthroat Trout be listed as an endangered species.

Thank you for the opportunity to comment.

Sincerely,

Mike Lorash
President, BBCH Inc.

Thank you,

Mike Lorash
4K Ranch
cavayro@montana.net
(406) 321-1958 Cell
(406) 328-6641 Office
(406) 328-6925 Home

Jeremiah: I believe the Cutthroat fish enhancement project up the Boulder on the Lake Plateau will be good to proceed with. We don't want these fish put on some Federal threatened or endangered list. this could limit our chances to go to the back country.

Thanks for the chance to comment.

John Simmons

2805 Hwy 78

Absarokee Mt. 59001

From the Desk of...
Philip M. Ness



I would like to comment on
your proposed actions regarding
lakes in the Abernethy-Bearfoot
Wilderness (Rainbow & Mirror Lake)
and Fournelle & Meatrack Creeks.

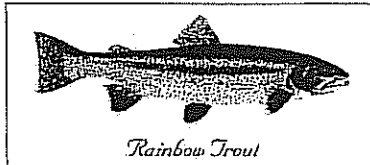
Gull net till you drop but

Please - no more poisoning of

Creeks - Enough is Enough !!!

Phil Ness

A member of Trout Unlimited
and Mountain Wildlife Fed.



Rainbow Trout

www.tu.org

Ken Frazer
Mt. FW + P
2300 Lake Elm Dr.
Billings, MT. 59105

Dear Mr. Frazer,

I want to go on record as being opposed to restoring native Yellowstone cutthroat trout in the upper Boulder River and in the Beartooth Wilderness, especially the poisoning of lakes & streams. I don't care what kind of trout I catch, nor do I know anyone else who does. I think we may have too many utopian biologists out there with not enough to do, especially considering these tough economic times, spending OPM "Other People's Money", or in the F + G dept not subject to budgetary restrictions as the rest of us are?

signed,
A concerned & angry taxpayer
C. T. Ripley
PO Box 184
Huntley, MT 59037
406-348-3312

I can not make it to the meeting in Big Timber on June 15. Please accept this letter as my statement.

JRWOOD@MT.GOV

May 28, 2011

After reviewing the web site pertaining to the EA cutthroat restoration program on the Upper Boulder River I am making this suggestion. As a property owner on the Upper Boulder Road, and a fisherman on the Boulder River for over 48 years, I suggest delaying the poisoning of the Boulder River. I believe it would be more prudent to change the possession limit for fishermen. Informed fishermen could be one of the best control tools available. If fishermen were not a factor in controlling the fish population, why do we have possession limits?

I recommend that the possession regulation be changed to: Unlimited Rainbow and Brook Trout, and no more than 2 Cutthroat Trout. Plus!!! - encourage fishermen (throughout the state) to participate in the restoration program of Cutthroat Trout by removing all caught Rainbows from the river as a factor.

I suggest the plan be implemented for at least two years, along with future studies, before poisoning the Boulder River.

Sincerely,
John A. Fuchs



April 12, 2011

Jeremiah Wood
Regional Fisheries Biologist
Montana Fish Wildlife and Parks
P.O. Box 27
Fishtail, MT 59028

Re: Upper Boulder River cutthroat restoration project

Dear Jeremiah:

The Board of Directors of Magic City Fly Fishers (MCFF), Trout Unlimited Chapter 582, whole heartedly supports your cutthroat restoration project in the upper Boulder River watershed. Native Yellowstone Cutthroat trout are a species of concern in Montana as well as an unofficial mascot of Montana's fishing heritage, and MCFF strongly supports any efforts to stop the decline of cutthroat populations, and hopefully, reverse those declining trends.

As always, we greatly appreciate your hard work and steadfast commitment to Montana's natural resources.

Warm regards,

Doug Haacke
Conservation Director
Magic City Fly Fishers, TU Chapter 582
Billings, MT

Verbal Comment at
June 15 public Meeting
- Earl Hanson
In support of project

